

Serial No. 10/074,224



PATENT

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

Katsuya SAKAYORI et al.

Serial No.: 10/074,224

Group Art Unit: Unassigned

Filed: February 14, 2002

Examiner: Unassigned

For: WET ETCHED INSULATOR AND ELECTRONIC CIRCUIT COMPONENT

PRELIMINARY AMENDMENT

Commissioner for Patents
Washington, D.C. 20231

Sir:

Prior to examination of the above-identified application,
please enter the following specification changes as noted below:

IN THE CLAIMS:

Please amend claims 17, 18, 35, 36, 55, 56, 82, 83, 103 and
104 as follows:

17. (Amended) An electronic circuit component comprising the
insulator according to claim 1 applied as an insulating layer.

18. (Amended) A suspension for a hard disk drive, comprising the insulator according to claim 1 applied as an insulating layer.

35. (Amended) An electronic circuit component comprising the insulator according to claim 19 applied as an insulating layer.

36. (Amended) A suspension for a hard disk drive, comprising the insulator according to claim 19 applied as an insulating layer.

55. (Amended) An electronic circuit component comprising the insulator according to claim 37 applied as an insulating layer.

56. (Amended) A suspension for a hard disk drive, comprising the insulator according to claim 37 applied as an insulating layer.

82. (Amended) An electronic component produced by the process for producing an electronic component according to claim 57.

83. (Amended) A suspension for a hard disk drive, produced by the process for producing an electronic component according to claim 57.

103. (Amended) An electronic component produced by the process for producing an electronic component according to claim 84.

104. (Amended) A suspension for a hard disk drive, produced by the process for producing an electronic component according to claim 84.

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REMARKS

Claims 1-104, as amended, remain herein. Claims 17, 18, 35, 36, 55, 56, 82, 83, 103 and 104 have been amended hereby.

This Preliminary Amendment is submitted to eliminate multiply dependent claims from the above-identified application.

Examination of this application on its merits is respectfully requested.

Respectfully submitted,

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insulator exists as an insulating layer in a laminate having a layer construction of first inorganic material layer - insulating layer - second inorganic material layer or a layer construction of inorganic material layer - insulating layer and at least a part of the inorganic material layer has been removed to expose the insulating layer.

12. The insulator according to claim 11, wherein all the inorganic material layers are formed of copper or surface treated copper.

13. The insulator according to claim 11, wherein all the inorganic material layers are formed of alloy copper or surface treated alloy copper.

14. The insulator according to claim 11, wherein all the inorganic material layers are formed of stainless steel or surface treated stainless steel.

15. The insulator according to claim 11, wherein one of the inorganic material layers is formed of stainless steel or surface treated stainless steel and the other inorganic material layer is formed of copper or surface treated copper.

16. The insulator according to claim 11, wherein one of the inorganic material layers is formed of stainless steel or surface treated stainless steel and the other inorganic material layer is formed of alloy copper or surface treated alloy copper.

17. (Amended) An electronic circuit component comprising the insulator according to claim 1 any one of claims 1 to 16 applied as an insulating layer.

18. (Amended) A suspension for a hard disk drive, comprising the insulator according to claim 1 any one of claims 1 to 16 applied as an insulating layer.

19. An insulator comprising a laminate of one or more insulation unit layers etchable by a wet process, said insulator having been heat treated after wet etching.

20. The insulator according to claim 19, wherein

the inorganic material layer has been removed to expose the insulating layer.

30. The insulator according to claim 29, wherein all the inorganic material layers are formed of copper or surface treated copper.

31. The insulator according to claim 29, wherein all the inorganic material layers are formed of alloy copper or surface treated alloy copper.

32. The insulator according to claim 29, wherein all the inorganic material layers are formed of stainless steel or surface treated stainless steel.

33. The insulator according to claim 29, wherein one of the inorganic material layers is formed of stainless steel or surface treated stainless steel and the other inorganic material layer is formed of copper or surface treated copper.

34. The insulator according to claim 29, wherein one of the inorganic material layers is formed of stainless steel or surface treated stainless steel and the other inorganic material layer is formed of alloy copper or surface treated alloy copper.

35. (Amended) An electronic circuit component comprising the insulator according to claim 19 ~~any one of claims 19 to 34~~ applied as an insulating layer.

36. (Amended) A suspension for a hard disk drive, comprising the insulator according to claim 19 ~~any one of claims 19 to 34~~ applied as an insulating layer.

37. An insulator comprising a laminate of one or more insulation unit layers etchable by a wet process, said insulator having been treated with a dehydration catalyst after wet etching.

38. The insulator according to claim 37, wherein the dehydration catalyst is an acid anhydride or an acid anhydride diluted with a solvent.

39. The insulator according to claim 37, wherein the dehydration catalyst is a carbodiimide or a carbodiimide diluted with a solvent.

material layer - insulating layer - second inorganic material layer or a layer construction of inorganic material layer - insulating layer and at least a part of the inorganic material layer has been removed to expose the insulating layer.

50. The insulator according to claim 49, wherein all the inorganic material layers are formed of copper or surface treated copper.

51. The insulator according to claim 49, wherein all the inorganic material layers are formed of alloy copper or surface treated alloy copper.

52. The insulator according to claim 49, wherein all the inorganic material layers are formed of stainless steel or surface treated stainless steel.

53. The insulator according to claim 49, wherein one of the inorganic material layers is formed of stainless steel or surface treated stainless steel and the other inorganic material layer is formed of copper or surface treated copper.

54. The insulator according to claim 49, wherein one of the inorganic material layers is formed of stainless steel or surface treated stainless steel and the other inorganic material layer is formed of alloy copper or surface treated alloy copper.

55. (Amended) An electronic circuit component comprising the insulator according to claim 37 ~~any one of claims 37 to 54~~ applied as an insulating layer.

56. (Amended) A suspension for a hard disk drive, comprising the insulator according to claim 37 ~~any one of claims 37 to 54~~ applied as an insulating layer.

57. A process for producing an electronic component, comprising the steps of: wet etching a laminate of conductive inorganic material layer - insulating layer - conductive inorganic material layer or a laminate of conductive inorganic material layer - insulating layer to pattern the conductive inorganic material layer; and then performing wet etching to

conductive inorganic material layer or both the two conductive inorganic material layers in the laminate are formed of stainless steel or surface treated stainless steel.

80. The process for producing an electronic component according to claim 57, wherein one of the two conductive inorganic material layers in the laminate is formed of stainless steel or surface treated stainless steel and the other is formed of copper alloy or surface treated copper alloy.

81. The process for producing an electronic component according to claim 57, wherein one of the two conductive inorganic material layers in the laminate is formed of stainless steel or surface treated stainless steel and the other is formed of copper or surface treated copper.

82. (Amended) An electronic component produced by the process for producing an electronic component according to claim 57 ~~any one of claims 57 to 81~~.

83. (Amended) A suspension for a hard disk drive, produced by the process for producing an electronic component according to claim 57 ~~any one of claims 57 to 81~~.

84. A process for producing an electronic component, comprising the steps of: laminating a laminate of conductive inorganic material layer - insulating layer - conductive inorganic material layer or a laminate of conductive inorganic material layer - insulating layer onto a dry film; and performing wet etching to produce an electronic component, wherein

the insulating layer in the laminate can be patterned by wet etching,

the insulating layer has a single or multilayer structure,

the thickness of the dry film applied is not less than 1.1 times that of one conductive inorganic material layer in the laminate, and

copper alloy.

100. The process for producing an electronic component according to claim 84, wherein the whole of one or two conductive inorganic material layers in the laminate is formed of stainless steel or surface treated stainless steel.

101. The process for producing an electronic component according to claim 84, wherein one of the two conductive inorganic material layers in the laminate is formed of stainless steel or surface treated stainless steel and the other is formed of copper alloy or surface treated copper alloy.

102. The process for producing an electronic component according to claim 84, wherein one of the two conductive inorganic material layers in the laminate is formed of stainless steel or surface treated stainless steel and the other is formed of copper or surface treated copper.

103. (Amended) An electronic component produced by the process for producing an electronic component according to claim 84 ~~any one of claims 84 to 102~~.

104. (Amended) A suspension for a hard disk drive, produced by the process for producing an electronic component according to claim 84 ~~any one of claims 84 to 102~~.